

REMARKS

This is intended as a full and complete response to the Office Action dated July 10, 2006, having a shortened statutory period for response set to expire on October 10, 2006. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-37 are pending in the application. Claims 1-37 remain pending following entry of this response. Claims 18, 23 and 24 have been amended. Applicants submit that the amendments do not introduce new matter.

Interview Summary

On September 25, 2006, a telephonic interview was held between Gero G. McClellan, attorney of record, Examiner Phillip Nguyen and the Supervisory Examiner. The parties discussed the cited reference *Bates* (US 6077312). Each of the independent claims was discussed. While no agreement could be reached at the time of the interview regarding allowability of the claims, the Examiners acknowledged the apparent lack of teaching by the *Bates* reference with respect to the claims. Applicants agreed to submit a formal written response to the office action.

Specification

In the specification, the paragraphs [0020] and claim number 24 have been amended to correct minor editorial problems. Specifically, "XML" has been expanded to "extensible-markup-language".

Claim Objections

Claim 12 is objected to because of the following informalities: Claim 12 should depend on claim 11, not claim 9. Applicants submit that claim 12 properly depends from claim 9. Withdrawal of the objection is respectfully requested.

Claim Rejections - 35 U.S.C. § 102

Claims 1-18, 21 -37 stand rejected under 35 U.S.C. 102(b) as being anticipated by *Bates* (US 6077312).

Applicants respectfully traverse this rejection.

As an initial matter, it is noted that while the Examiner relies on United States patent 6,077,312, the citations are made to a text formatted document. This issue was raised with the Examiner during a telephone conversation in response to which the Examiner provided the undersigning attorney with a copy of the text formatted document. Accordingly, all citations are made thereto. However, it is noted that the Examiner's citations for paragraphs 0001 through 0020 are still ambiguous because the text formatted document restarts paragraph numbering at the Detailed Description.

Bates is generally directed to can additionally halting execution of a computer program when the context of the program meets a predetermined criteria. (0016, Summary.) The context of the program is defined by a calling history that identifies the sequence of routines in the program that were called prior to reaching the instruction being processed at a given instant. (*Id.*) The calling history is maintained by a well-known data structure referred to as a calling stack. (0015, Detailed Description.) The predetermined criteria, which defines the condition upon which program execution is halted, can include the presence or absence of routines in the calling history, the presence or absence of a specific ordering of routines in the calling history and the length of a calling history. (0017, Summary.) Again, if the context of the executing program at a given instant during execution meets the predetermined criteria, then execution is halted. (0016, Summary.) The particular implementation mechanism by which this is accomplished is a "context sensitive breakpoint" that is associated with the predetermined criteria. Specifically, the test to determine whether the context of the executing program at a given instant meets the predetermined criteria is performed in response to encountering a context sensitive breakpoint during execution.

In contrast, presently claimed embodiments are directed to a comparison of code states at a halted location. In other words, while the reference performs a check during execution to determine whether execution should be halted, the presently claimed embodiments perform operations at a halted location.

For example, claim 1 recites, at a halted location, determining whether a current state of the code matches a previously-encountered given state described in a history record in a debug history repository. For this recitation the Examiner cites to paragraph

0018 (presumably in the Detailed Description). However, paragraph 0018 specifically states that a test is performed to determine whether the calling stack matches the predetermined criteria "upon reaching the breakpoint during execution of the computer program under debug". In other words, the test performed by *Bates* is not done at a halted location, but rather during execution. In fact, the whole point of *Bates* is to determine whether to halt execution at all. Therefore, *Bates* does not teach "determining (at a halted location) whether a current state of the code matches a previously-encountered given state described in a history record in a debug history repository". On this basis alone, Applicants submit that the rejection is improper and respectfully request that the rejection be withdrawn and the claims be allowed.

Further, Applicants submit that the Examiner's attempt to equate the claimed "debug history repository" with a "calling stack" is untenable. A calling stack, as defined by *Bates* (and as is generally well known), is a data structure that maintains information regarding the sequence of routines that are called during execution of a computer program. (0015, Detailed Description.) Thus, a calling stack is a lower level object used in the execution of a program. In contrast, a repository containing records is well-known as a data storage facility containing data for consumption by end users. Therefore, Applicants submit that the rejection is improper and respectfully request that the rejection be withdrawn and the claims be allowed.

Applicants note that the Examiner cites to paragraphs 0006, 0043 for the teaching of a halted position in the code. Specifically, paragraph 0006 (in the Background) merely describes the well-known operation of breakpoints which halt execution of the program upon being encountered. *Bates* relies on a special type of conditional breakpoint referred to as a "context sensitive breakpoint" to implement the context test described at paragraph 0018 of the Detailed Description. However, the mere reference of well-known concepts such as breakpoints is irrelevant. The issue is what is performed at a halted location in the code being debugged. As noted above, *Bates* does not "determining (at a halted location – which may be after encountering a breakpoint) whether a current state of the code matches a previously-encountered given state described in a history record in a debug history repository". Therefore, Applicants

submit that the rejection is improper and respectfully request that the rejection be withdrawn and the claims be allowed.

Paragraph 0043 teaches updating a context sensitive breakpoint through one or more user interfaces, which is typically performed when execution of the program is halted at a specific instruction or statement. In other words, this portion of *Bates* describes how the context sensitive breakpoint is set, i.e., defined. Thus, this configuration step is performed prior to the context test that is performed during execution, as explained in paragraph 0018. Again, the context test of *Bates*, which the Examiner relies upon, is not performed while execution is halted, but rather during execution for the very purpose of determining whether to halt execution. Therefore, *Bates* does not teach “determining (at a halted location) whether a current state of the code matches a previously-encountered given state described in a history record in a debug history repository”. Therefore, Applicants submit that the rejection is improper and respectfully request that the rejection be withdrawn and the claims be allowed.

Claim 9 includes limitations similar to those of claim 1. Accordingly, at least some of the arguments made above with respect to claim 1 are applicable to claim 9. Further, as described above the calling stack of *Bates* maintains information regarding the sequence of routines that are called during execution of the computer program. Therefore, the calling stack does not contain “data describing a series of variable evaluations performed during a stoppage at a position in the code”, since the stack tracks an execution path of the code. During a stoppage, no entries would be placed on the stack.

Therefore, Applicants submit that the rejection is improper and respectfully request that the rejection be withdrawn and the claims be allowed.

Regarding claim 18, as was described above, the context testing performed by *Bates* is done for the very purpose of determining whether to halt execution of the program under debug and is not done for a given halted (i.e., stopped) position. Thus, *Bates* does not teach “querying a debug history repository to determine whether a current state of the code at the current halted position matches a given state described in a history record in the debug history repository”. Therefore, Applicants submit that

the rejection is improper and respectfully request that the rejection be withdrawn and the claims be allowed.

Regarding claim 23, it follows (for reasons given above with respect to claim 1) that *Bates* does not “determine, at a given halted position in the code, whether a current state of the code matches a given state described in a history record of the plurality of history records”. Therefore, Applicants submit that the rejection is improper and respectfully request that the rejection be withdrawn and the claims be allowed.

Claim Rejections - 35 U.S.C. § 103

Claims 19 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bates et al* (US 6,077,312).

Applicants respectfully traverse this rejection.

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2142. To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP § 2143. The present rejection fails to establish at least the third criteria.

Specifically, as discussed above, *Bates* does not teach the elements of claim 18, from which 19 and 20 depend. Therefore, *Bates* does not teach all the elements of claims 19 and 20. Therefore, the claims are believed to be allowable, and allowance of the claims is respectfully requested.

Conclusion

Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted, and
S-signed pursuant to 37 CFR 1.4,

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